

Appl. No. 09/771,313
Amdt. Dated 11/03/2004
Reply to Office action of 08/03/2004

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Listing of Claims

Claims 1-11 (cancelled)

Claim 12 (currently amended) A method for realizing the ~~physical layer~~ topology of a network below the IP layer independent of any Layer 2 or layer 3 protocol, said network comprising a plurality of distinct domains, said method comprising the steps of:

storing an electronic serial number and model number for network elements of the distinct domains,

sending a request packet at a layer below the IP layer to a network element in one of said domains for use in a ~~physical layer~~ an auto discovery at the layer below the IP layer, said request comprising a first packet protocol identifier and a sequence number;

receiving a response packet at the layer below the IP layer from said network element for use in a ~~physical layer~~ an auto-discovery protocol at the layer below the IP layer, said response packet comprising a second packet protocol identifier, sequence number, and said electronic serial number and model number of said network element; and

providing said response packet to a network management system common to all of said distinct domains.

Claims 13-15 (cancelled)

Claim 16 (currently amended) The method in accordance with claim ~~15~~ 12 wherein said auto-discovery is done at the lowest layer below any other protocol domain in the protocol stack, in order to discover elements within all high-layered protocol domains.

Claim 17 (currently amended) A system for realizing the ~~physical layer~~ topology of a network below the IP layer, said network including a plurality of distinct domains, said system including:

a network management system common to said plurality of distinct domains;

means for identifying network elements in said domains by encoded serial and model numbers;

means responsive to a request for conducting a ~~physical layer~~ an auto-discovery protocol at a layer below the IP layer for a network element in one of said domains;

means for receiving at the layer below the IP layer a response packet from said one of said domains requested to conduct a ~~physical~~ the auto discovery protocol; and

means for forwarding said response packet to said network management system.

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Claim 18 (previously added) The system in accordance with claim 17 wherein said network is an optical network.

Claim 19 (cancelled)

Claim 20 (currently amended) The system in accordance with claim ~~19~~ 17 wherein said ~~physical~~ auto-discovery is done at the lowest level in said protocol stack.

Claim 21 (currently amended) A method for realizing a ~~physical-layer~~ topology of a network below the IP layer, said network comprising a plurality of distinct domains and a network management system common to said distinct domains, said method comprising the steps of:

uniquely identifying network elements in said domains;

sending a request packet to one of said domains;

conducting a ~~physical-layer~~ an auto-discovery at a low level below the IP layer in the protocol stack at said one domain in response to said request packet;

forwarding a response packet from said one domain; and

providing said response packet to said network management system.

Claim 22 (currently amended) The method in accordance with claim 21 wherein said step of uniquely identifying network elements includes electronically storing a pair of strings consisting of the serial number and model number of said network elements.

Claim 23 (previously added) The method in accordance with claim 22 wherein said low level is lowest level in said protocol stack.